

WEST Search History

DATE: Wednesday, December 07, 2005

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		<i>DB=PGPB,USPT,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>	
<input type="checkbox"/>	L3	L1 same etch\$4	9
<input type="checkbox"/>	L2	L1 and nanostructure	3
<input type="checkbox"/>	L1	(arc! or (anti adj1 reflective adj1 coating)) near3 oxidiz\$5	313

END OF SEARCH HISTORY

β -Ca₂P₂O₇ and α -Ca₃(PO₄)₂ could induce an apatite layer on its surface, exhibiting bioactivity. The bioactive response of the micro-arc oxidized films to the structural factors and the apatite-induced mechanism were discussed.

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Citing References

AB The gas evapn. method was used to prep. Sn oxide ultrafine particle (UFP) films. Sn metal (99.99%) evapd. by arc discharge was quenched and oxidized in He-O₂ (0.1-20 vol.%) gas mixt., and grew to nanocrystal size. Product was carried immediately from the evapn. chamber to a deposition chamber which was kept under 0.1 torr through a thin transfer pipe, and deposited on quartz, glass and Si substrates. A 0.3 mm diam. nozzle was attached at the end of the transfer pipe and the programmed motion of substrate drew film patterns. Samples were analyzed by XRD, TEM, SEM and photospectrometer. For O partial pressure (PO₂) >80 torr, single phase SnO₂ UFP films were obtained and mean particle size was 24 nm, whereas on the condition of PO₂ ≤40 torr, the product was composed of Sn, SnO and SnO₂. When PO₂ = 80 torr, the transparency of the film whose thickness was ~2 μm was 20-80% at the visible light region and its resistivity was 7.8 Ω·m.

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AB The wear life of metal components can be increased by application of ceramic coatings. A recently developed micro-arc discharge oxidizing technique allows for the formation 100-200 μm thick Al-Si-O coatings on the surface of Al alloys. A composite Al₂O₃-SiO₂ coating is formed at room temp. as a result of a reactive process between Al in the alloy itself and O and Si supplied by an electrolyte. Al-Si-O coatings were investigated by using XPS, Vickers and nanoindentation hardness tests, ball-on-disk, and block-on-ring friction and wear tests. Coatings consisted of ≥2 phases, hard Al₂O₃ phase and softer aluminosilicate phase. A max. hardness of 17 GPa was found for coatings with highest content of the Al₂O₃ phase. The tribol. properties of Al-Si-O coatings with different compn. are discussed. The lowest friction coeff. was found for the Al_{0.26}Si_{0.08}O_{0.66} coating and was 0.15-0.25 depending on the environment. Application of this coating decreased the wear rate of Al alloy components by several orders of magnitude and permitted operation of coated friction pairs at a 1 GPa contact load.

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FILE 'CAPLUS' ENTERED AT 15:34:03 ON 07 DEC 2005

FILE 'CAPLUS' ENTERED AT 15:34:13 ON 07 DEC 2005

L1 1 S TERA (4A) OXIDIZ?
 L2 2 S TERA AND OXIDIZ?
 L3 0 S TUNABLE (1W) ETCH (1W) RESITANT
 L4 6 S TUNABLE (1W) ETCH (1W) RESISTANT
 L5 1 S L4 AND OXIDIZ?
 L6 112761 S ARC OR (ANTI (1W) REFLECTIVE (1W) COATING)
 L7 231 S L6 (4A) OXIDIZ?
 L8 1 S L7 AND ETCH?

L9 7 S L7 AND NANO?

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